subject to mutation—that is to say, in a given race individuals may occur which differ from their fellows in their genetic constitution. Individuals frequently occur which possess new structural or functional features; and these features, though often the transient peculiarities of the individual only, are in some cases transmitted to the offspring for many successive generations. There is reason to suppose that this phenomenon occurs in nature as well as in laboratory cultures. The progeny of an organism which varies may thus constitute a new race, in which every individual possesses the new character."

The author defines mutation as a permanent change, however small it may be, which takes place in a micro-organism and is transmitted to subsequent generations. These mutations are classed as structural and physiological,—the latter comprising those in which the power of producing pigments, ferments, etc., is seen.

In some instances the mutations seem to be caused by chemical or other conditions of the medium; in others, in which effort was made to secure uniformity of medium, changes still occurred where it seems necessary to assume that the conditions of the changes were primarily internal.

DIFFERENTIATION IN CHROMOSOMES

Agar (Q. J. M. S. Dec. 1912) reports studies of chromosomes in Lepidosiren in which he shows that there is a widespread tendency for chromosomes to be constricted or to segment transversely. This is especially noticeable when the chromosomes are short in comparison with their length. The point at which this constriction takes place in a given chromosome is constant for that chromosome, and is the point at which it most readily tends to form the angle of the V when that form is taken. The author believes that the constancy of this position denotes a constant differentiation of the chromosomes *in* the long axis. The presence of the constrictions is not, however, necessarily to be considered as evidence of bivalency or of a future division in that plane.